

Abstract:

A green article comprising an A-B powder mixture and methods of manufacturing such green articles and corresponding sintered articles are disclosed. The A-B powder mixture consists of a minor volume fraction of a relatively fine powder A and a complementary major 5 volume fraction of a relatively coarse prealloyed powder B wherein the A-B powder mean particle size ratio is at least about 1:5. Metal powder A consists of one or more elemental metals or alloys which has a melting or solidus temperature above the highest sintering temperature at which the A-B powder mixture may be sintered without slumping. Prealloyed metal powder B consists of one or more alloys which are amenable to supersolidus liquid phase sintering. Green 10 articles made from the A-B powder have a wider sintering temperature window than do articles made from prealloyed metal powder B alone.